Remarks:

In the Response filed March 27, 2002, the Applicants requested that a previous amendment to claim 1 be withdrawn, for the reasons set forth in the Response. However, the amendment had already been entered. The Applicants therefore respectfully request that the above amendment to claim 1 be entered for the sole purpose of returning claim 1 to its original form. An interlined form of amended claim 1 is included in the attached Exhibit "A".

Double Patenting Rejection

The Examiner has indicated that the earlier obviousness-type double-patenting rejection of claim 1 can be overcome with a terminal disclaimer, disclaiming any term of a patent issuing on the instant application beyond the term of either U.S. Patent No. 6,028,820 or U.S. Patent No. 5,796,678.

Upon review of the facts, the Applicants again contend that the instant claims are not obvious in light of either the '820 patent or the '678 patent. To build further on the arguments set forth in the Response filed March 27, 2002, the Applicants have performed a full-text search on both the '820 patent and the '678 patent and have been unable to find the word "velocity" anywhere in either patent. Accordingly, there is nothing in either of these patents to suggest the following steps, which are included in claim 1 of the instant application:

> "determining a first velocity vector "V_x" for migration of fluid in a region of interest in the subterranean formation, the first velocity vector comprising attributes of speed and direction of flow of fluid in a first direction in the region of interest;
>
> "determining a second velocity vector "V_y" for migration of fluid in the region of interest, the second velocity vector comprising attributes of speed

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and direction of flow of fluid in a second direction in the region of interest; [and]

"extrapolating the velocity vectors to identify the fluid accumulation location."

As stated in MPEP 706.02(j):

> "[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the cited references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. **Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure." (Emphasis added.)

Since neither the '820 patent nor the '678 patent, nor any of the other prior art references, teach or suggest the mentioned claim limitations (i.e., determining first and second velocity vectors, and extrapolating the velocity vectors), there can be no proper obviousness-type double patenting rejection of claim 1. The Applicants therefore request that the rejection of claim 1 on this basis be removed.

Rejection of Claims under 35 U.S.C. §§ 102 and 103 (Watts III)

Claims 1 and 2 were previously rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,108,608 (Watts III). Claims 2-8 were previously rejected under 35 U.S.C. § 103 as being anticipated by Watts III. The Examiner has asked for clarification of the distinction between Watts III and the Applicants' claims.

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In the Response filed March 27, 2002, the Applicants pointed out critical distinctions between Watts III and the Applicants' claim 1. Specifically:

Applicants' claim 1 recites steps of determining two velocity vectors, and extrapolating the velocity vectors to identify a fluid accumulation location, and that the velocity vectors are primarily functions of supplementary pressure "dP" in the region of interest, the permeability "c" of the region of interest, and the viscosity "u" of the fluid in the region of interest. Among other differences, Watts III does not teach or suggest using velocity vectors. Further, the mere fact that both Watts III and the present invention make use of vectors is irrelevant, since the use of vectors to represent a property is well known in the art of mathematical modeling.

As just stated, Watts III does not teach or suggest using velocity vectors. Rather, Watts III uses vectors "corresponding to a characteristic of base components". (Column 7, lines 9-10.) Watts III defines what a "base component" is at column 4, lines 52-60. Specifically, Watts III says "many base components will be hydrocarbon species such as methane, ethane, [etc.]." Accordingly, the vectors used by Watts III correspond to a characteristic of these hydrocarbons. The only "characteristic" Watts III ever mentions is mole fractions of the components (see column 7, lines 14-15).

To characterize the main difference between Watts III and the Applicants' invention, Watts III is concerned only with WHAT the fluid IS, and not WHERE it is. A comparison of the preambles of the claims of Watts III and the Applicants' invention could not make this clearer. Watts III claims "a method for estimating one or more properties of a multicomponent fluid contained in one of more volumetric zones", (column 25, lines 54-56) whereas the Applicants' claim "a method for determining the location of the accumulation fluids in a subterranean formation". Watts III is directed to reservoir simulators (column 1, lines 19-34), which (as the name implies) "are computer programs used "to understand the complex chemical, physical, and fluid flow processes occurring in a petroleum reservoir" (column 1, lines 26-27). That is, the

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invention of Watts III is used when you already have a reservoir. The Applicants address the problem of finding the reservoir in the first place.

While the Applicants acknowledge that it is what is disclosed in a reference that is relevant for purposes of 35 U.S.C. §§ 102 and 103, and not what is claimed in the reference, still one might expect to find some overlap between the claims in a proper §§ 102 and 103 reference, and the claims in the application. Doing such a comparison of claim 1 of Watts III and Applicants' claim 1 reveals that there is not one single claim element in common. Moreover, Watts III never uses velocity of the fluids in the reservoir as a characteristic, for any purpose.

To summarize, Watts III uses mole fractions of fluids in a reservoir to help build a computer model of a known reservoir; in contrast, the Applicants use fluid velocity vectors to help determine where the fluids are likely to have accumulated in an area of interest (i.e., to find a reservoir). More simply, Watts III is directed to reservoir production (i.e., getting fluids out of a reservoir) while the Applicants' invention is directed to exploration (i.e., finding a reservoir).

For these reasons the Applicants contend that the Applicants' claims are not anticipated by, nor obvious in light of, Watts III, and respectfully request that the rejections of the claims be removed and the claims allowed.

Summary

For the above stated reasons, the Applicants believe that the case is in condition for allowance, and respectfully request the same.

Respectfully submitted,

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By _____

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